

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims:

Claim 1 (Currently amended): A method for generating multiple descriptions of compressed data, the method comprising:

- generating transform coefficients from input data;
- quantizing the transform coefficients;
- generating an energy distribution of the quantized transform coefficients;
- grouping the transform coefficients into layers based on the energy distribution; and
- entropy coding a first number of the layers to generate a first description of compressed data; and

- entropy coding a second number of the layers to generate a second description of compressed data.

Claim 2 (Original): The method of claim 1, wherein grouping the transform coefficients comprises:

- grouping the transform coefficients in an order of significance.

Claim 3 (Original): The method of claim 1, wherein grouping the transform coefficients comprises:

- splitting the transform coefficients into multi-bit units; and
- grouping the multi-bit units into layers.

Claim 4 (Original): The method of claim 1, wherein grouping the transform coefficients comprises:

- splitting the transform coefficients into nibbles; and
- grouping the nibbles into layers.

Claim 5 (Original): The method of claim 4, wherein grouping the nibbles comprises:
grouping higher and lower nibbles separately into layers.

Claim 6 (Original): The method of claim 4, wherein grouping the transform coefficients further comprises:

splitting the transform coefficients into crumbs; and
grouping the nibbles and crumbs into layers.

Claim 7 (Canceled).

Claim 8 (Currently amended): The method of claim 1, further comprising:

entropy coding each of the ~~additional number of~~ layers to generate a master inventory of compressed data.

Claim 9 (Currently amended) The method of claim 8, wherein entropy coding the first and second numbers of layers comprises: further comprising:

entropy coding first and second selected numbers of the layers by extracting the a first and second selected numbers of the layers from the master inventory.

Claim 10 (Original): The method of claim 1, wherein generating the transform coefficients comprises:

generating transform coefficients using absolute discrete cosine transform (DCT).

Claim 11 (Original): The method of claim 1, further comprising:

arranging the quantized transform coefficients prior to generating the energy distribution.

Claim 12 (Currently amended): Apparatus for generating multiple descriptions of compressed data comprising:

- means for generating transform coefficients from input data;
- means for quantizing the transform coefficients;
- means for generating an energy distribution of the quantized transform coefficients;
- means for grouping the transform coefficients into layers based on the energy distribution; and
- means for entropy coding a first number of the layers to generate a first description of compressed data; and
- means for entropy coding a second number of the layers to generate a second description of compressed data.

Claim 13 (Original): The apparatus of claim 12, wherein the means for grouping the transform coefficients comprises:

- means for splitting the transform coefficients into multi-bit units; and
- means for grouping the multi-bit units into layers.

Claim 14 (Original): The apparatus of claim 12, wherein the means for grouping the transform coefficients comprises:

- means for splitting the transform coefficients into nibbles; and
- means for grouping the nibbles into layers.

Claim 15 (Original): The apparatus of claim 14, wherein the means for grouping the nibbles comprises:

- means for grouping higher and lower nibbles separately into layers.

Claim 16 (Previously Presented): The apparatus of claim 14, wherein the means for grouping the transform coefficients further comprises:

- means for splitting the transform coefficients into crumbs; and
- means for grouping the nibbles and crumbs into layers.

Claim 17 (Canceled).

Claim 18 (Currently amended): The apparatus of claim 12, further comprising:

means for entropy coding each of the additional number of layers to generate a master inventory of compressed data.

Claim 19 (Currently amended): The apparatus of claim 18, wherein means for entropy coding the first and second numbers of layers comprise: further comprising:

means for extracting the first and second a selected numbers of layers from the master inventory.

Claim 20 (Currently amended): The apparatus of claim 12, wherein generating the transform coefficients comprises:

means for generating transform coefficients using absolute discrete cosine transform (DCT).

Claim 21 (Original): The apparatus of claim 12, further comprising:

means for arranging the quantized transform coefficients prior to generating the energy distribution.

Claim 22 (Currently amended): Apparatus for generating multiple descriptions of compressed data comprising:

a transform module configured to generate transform coefficients from input data;
a quantization module coupled to the transform module and configured to quantize the transform coefficients;
a layering module coupled to the quantization module, the layering module configured to generate an energy distribution of the quantized transform coefficients and to group the transform coefficients based on the energy distribution; and

an entropy coder coupled to the layering module and configured to entropy code a first number of the layers to generate a first description of compressed data and entropy code a second number of the layers to generate a second description of compressed data.

Claim 23 (Currently amended): The apparatus of claim 22, wherein the entropy coder entropy codes each of the additional number of layers to generate a master inventory of compressed data and wherein the apparatus further comprises:

a storage medium configured to store the master inventory.

Claim 24 (Currently amended): The apparatus of claim 23, further comprising:

a selection module configured to extract the first and second ~~a selected~~ numbers of layers from the master inventory.

Claim 25 (Currently amended): A method for generating compressed data based on quantized transform coefficients of the data, the method comprising:

accessing an inventory of multiple layers of compressed data generated based on an energy distribution of the quantized transform coefficients, wherein the multiple layers comprise different entropy coded layers of compressed data; and

extracting a first selected number of layers from the inventory based on a first bit rate requirement to generate a first description of the compressed data; and

extracting a second selected number of layers from the inventory based on a second bit rate requirement to generate a second description of the compressed data.

Claim 26 (Original): The method of claim 25, wherein accessing the inventory of multiple layers comprises:

accessing a master inventory of each multiple layers of compressed data generated based on an energy distribution of the quantized transform coefficients.

Claim 27 (Currently amended): Apparatus for generating compressed data based on quantized transform coefficients of the data, the apparatus comprising:

means for accessing an inventory of multiple layers of compressed data generated based on an energy distribution of the quantized transform coefficients, wherein the multiple layers comprise different entropy coded layers of compressed data; and

means for extracting a first selected number of layers from the inventory based on a first bit rate requirement to generate a first description of the compressed data; and

means for extracting a second selected number of layers from the inventory based on a second bit rate requirement to generate a second description of the compressed data.

Claim 28 (Original): The apparatus of claim 27, wherein the means for accessing the inventory of multiple layers comprises:

means for accessing a master inventory of each multiple layers of compressed data generated based on an energy distribution of the quantized transform coefficients.

Claim 29 (Currently amended): Apparatus for generating compressed data based on quantized transform coefficients of the data, the apparatus comprising:

a storage medium configured to store an inventory of multiple layers of compressed data generated based on an energy distribution of the quantized transform coefficients, wherein the multiple layers comprise different entropy coded layers of compressed data; and

a selection module coupled to the storage medium and configured to extract a first selected number of layers from the inventory based on a first bit rate requirement to generate a first description of the compressed data, and to extract a second selected number of layers from the inventory based on a second bit rate requirement to generate a second description of the compressed data.

Claim 30 (Original): The apparatus of claim 29, wherein the storage medium is configured to store a master inventory of each multiple layers of compressed data generated based on an energy distribution of the quantized transform coefficients.

Claim 31 (Currently amended): A computer program product, comprising:

a computer readable medium including:

code for generating transform coefficients from input data;

code for quantizing the transform coefficients;

code for generating an energy distribution of the quantized transform coefficients;

code for grouping the transform coefficients into layers based on the energy distribution;

and

code for entropy coding a first number of the layers to generate a first description of compressed data; and

code for entropy coding a second number of the layers to generate a second description of compressed data.

Claim 32 (Previously Presented): The computer readable medium of claim 31, wherein the code for grouping the transform coefficients comprises:

code for grouping the transform coefficients in an order of significance.

Claim 33 (Previously Presented): The computer readable medium of claim 31, wherein the code for grouping the transform coefficients comprises:

code for splitting the transform coefficients into multi-bit units; and

code for grouping the multi-bit units into layers.

Claim 34 (Previously Presented): The computer readable medium of claim 31, wherein the code for grouping the transform coefficients comprises:

code for splitting the transform coefficients into nibbles; and

code for grouping the nibbles into layers.

Claim 35 (Previously Presented): The computer readable medium of claim 34, wherein the code for grouping the nibbles comprises:

code for grouping higher and lower nibbles separately into layers.

Claim 36 (Previously Presented): The computer readable medium of claim 34, wherein the code for grouping the transform coefficients further comprises:

code for splitting the transform coefficients into crumbs; and
code for grouping the nibbles and crumbs into layers.

Claim 37 (Canceled).

Claim 38 (Currently amended): The computer readable medium of claim 31, further comprising:

code for entropy coding each of the ~~additional number of~~ layers to generate a master inventory of compressed data.

Claim 39 (Currently amended): The computer readable medium of claim 38, further comprising:

code for extracting the first and second ~~a selected numbers~~ of layers from the master inventory.

Claim 40 (Currently amended): The computer readable medium of claim 31, wherein the code for generating the transform coefficients comprises:

code for generating transform coefficients using absolute discrete cosine transform (DCT).

Claim 41 (Previously Presented): The computer readable medium of claim 31, further comprising:

code for arranging the quantized transform coefficients prior to generating the energy distribution.